

REMARKS/ARGUMENTS

Favorable consideration of this application in light of the following discussion is respectfully requested.

Claims 4-6, 10-12, 16 and 32-46 are presently pending in this application.

In the outstanding Office Action, Claims 4-6 and 34 were rejected under 35 U.S.C. §102(b) over Harada et al. WO 01/051173 A (hereinafter “WO ‘173,” see US 2002/0197193); Claims 10, 16, 37-39 and 46 were rejected under 35 U.S.C. §103(a) over WO ‘173 in view of Yamamura et al. JP 2000-102709 (hereinafter “JP ‘709”); Claims 32 and 33 were rejected under 35 U.S.C. §103(a) over WO ‘173 in view of Veres (U.S. Patent 3,929,494); Claims 32 and 33 were rejected under 35 U.S.C. §103(a) over WO ‘173 in view of Veres (U.S. Patent 3,929,494); Claims 35, 36, 40, 41, 44 and 45 were rejected under 35 U.S.C. §103(a) over WO ‘173 and JP ‘709, and further in view of Veres (U.S. Patent 3,929,494); and Claims 11, 12, 42 and 43 were rejected under 35 U.S.C. §103(a) over WO ‘173 in view of JP ‘709.

Claim 4 of the present invention is directed to a honeycomb filter for purifying exhaust gases, and includes columnar porous ceramic members and an adhesive layer combining the columnar porous ceramic members with one another. The adhesive layer is formed by drying an adhesive paste including a pore forming material which forms pores adjusting a thermal capacity per unit volume of the adhesive layer such that the thermal capacity per unit volume of the adhesive layer becomes lower than a thermal capacity per unit volume of the porous ceramic members. By employing an adhesive layer having a thermal capacity adjusted as such, the honeycomb filter achieves a lower thermal capacity as a whole, and can be heated in a shortened period of time.

WO ‘173 describes a honeycomb structure, but fails to teach or suggest “an adhesive layer combining said columnar porous ceramic members with one another and formed by

drying an adhesive paste including a pore forming material which forms a plurality of pores  
adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer becomes lower than a thermal capacity per unit volume of the porous ceramic members” as recited in Claim 4. WO ‘173 refers to a joint layer that may contain ceramic fiber, ceramic powder, cement, etc., which may be mixed with a binder material. The reference, however, does not teach the thermal capacity of the joint layer or any adjustment of the thermal capacity of the joint layer in relation to the thermal capacity of porous ceramic members. WO ‘173 simply lists the materials available for the joint layer, and does not provide any further descriptions. In contrast, according to Claim 4, the adhesive layer has a thermal capacity adjusted to be lower than that of the porous ceramic members by incorporating a pore forming material in the adhesive paste and forming pores in the adhesive layer. Therefore, the subject matter recited in Claim 4 is clearly distinguishable from WO ‘173.

JP ‘709 relates to a ceramic structure and describes a sealing material used for a coating layer provided on the ceramic structure. According to JP ‘709, the sealing material may include an inorganic fiber, an inorganic binder, an organic binder and inorganic particles. However, similarly to WO ‘173, JP ‘709 merely lists such materials and lacks any further descriptions relating to adjustment of the thermal capacity of the sealing material to be lower than the thermal capacity of porous ceramic members or pore formation for such an adjustment. Thus, JP ‘709 does not teach or suggest the adhesive layer recited in Claim 4 and cannot make up for the deficiency in the teaching of WO ‘173, either.

Veres describes a sealant for glass-ceramic surfaces, but fails to teach or suggest the adhesive layer recited in Claim 4. Veres simply states that the sealant may include SiC powder that can form gas upon firing, and does not describe thermal capacity of such a

sealant or adjustment of the thermal capacity in any way. Therefore, the subject matter of Claim 4 is clearly distinguishable from Veres.

Because none of WO '173, JP '709 and Veres discloses the adhesive layer as recited in Claim 4, even the combined teachings of these cited references are not believed to render the structure recited in Claim 4 obvious.

Claim 10 is directed to a honeycomb filter for purifying exhaust gases. The honeycomb filter includes a ceramic block and a coating material layer formed on a circumferential face of the ceramic block. The ceramic block includes one or more columnar porous ceramic members. The coating material is formed by drying a coating material paste including a pore forming material which forms pores adjusting a thermal capacity per unit volume of the coating material layer such that the thermal capacity per unit volume of the coating material layer becomes lower than a thermal capacity per unit volume of the porous ceramic member. By having such a coating material, the honeycomb filter can achieve a reduced thermal capacity overall, which is beneficial in accelerating heating processes.

As discussed above for Claim 4, none of WO '173, JP '709 and Veres discloses adjustment of a thermal capacity of a coating material to be lower than the thermal capacity of the porous ceramic member. Nor do these references disclose such an adjustment of the thermal capacity by incorporating a pore forming material in a coating material paste used to form the coating material. Thus, Claim 10 is distinguishable from WO '173, JP '709 and Veres as well.

Claim 16 is directed to a honeycomb filter including a ceramic block, an adhesive layer, and a coating material. Claim 16 includes subject matter substantially similar to what has been discussed for Claims 4 and 10 above. Therefore, Claim 16 is also distinguishable from WO '173, JP '709 and Veres.

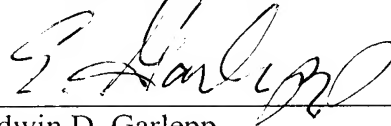
For the foregoing reasons, Claims 1, 10 and 16 are believed to be allowable.

Furthermore, since Claims 5, 6, 11, 12 and 32-46 depend directly or indirectly from one of Claims 1, 10 and 16, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 5, 6, 11, 12 and 32-46 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, L.L.P.



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Edwin D. Garlepp  
Attorney of Record  
Registration No. 45,330

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 07/09)